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JAPANESE PATENT OFFICE

## PATENT ABSTRACTS OF JAPAN

(11)Publication number: 07335942

(43)Date of publication of application: 22.12.1995

(51)Int.CI.

H01L 33/00

G09F 9/33

(21)Application number: 06131531

(22)Date of filing: 14.06.1994

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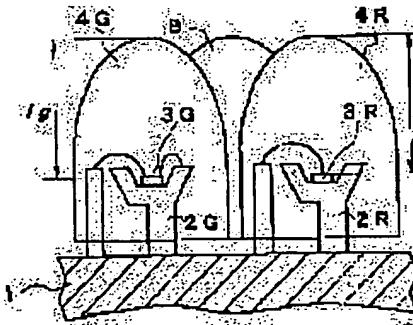
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## (54) FULL-COLOR LED DISPLAY

(57)Abstract:

PURPOSE: To obtain the stable white balance with high luminance and small power consumption by a method wherein a green color LED and a blue color LED which have respective light emitting chips made of gallium nitride system semiconductor are combined together.

CONSTITUTION: Respective lead frames of a red color LED, a green color LED and a blue color LED (B) are electrically connected to the surface of a board 1 on which wiring patterns are formed. The green color LED has a green light emitting chip 3G which is composed of a sapphire substrate and a gallium nitride system compound semiconductor layer built up on the sapphire substrate and whose dimensions are 100 $\mu$ m thick and 350 $\mu$ m square. The green light emitting chip has a double-hetero structure composed of an InGaN active layer and a GaAIN cladding layer. The blue color LED (B) has a blue light emitting chip whose dimensions, etc., are the same as those of the green light emitting chip 3G except that the composition of the InGaN active layer is different. Further, in order to adjust directional characteristics, the substrate of the red light emitting chip 3R of the red color LED is polished.



## LEGAL STATUS

[Date of request for examination] 06.01.1998  
[Date of sending the examiner's decision of rejection]  
[Kind of final disposal of application other than the  
examiner's decision of rejection or application converted  
registration]  
[Date of final disposal for application]  
[Patent number] 2979961  
[Date of registration] 17.09.1999  
[Number of appeal against examiner's decision of rejection]  
[Date of requesting appeal against examiner's decision of  
rejection]  
[Date of extinction of right]

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